Advanced Console Servers

# Advanced console port access without the high price.

FEATURES

» Enable you to use a single user interface to manage multiple serial console ports and devices.

» Accessible in band (via Ethernet or secure tunnel over the Web) or out of band via a modem link. Include a built-in modem, as well as a DB9 port for external modem connections.

» Also have dual Ethernet ports with bonding, ensuring availability and automatic failover.

» Pinned for "rolled" cabling of Cisco console ports.

» Robust LAN console port management with secure Serial over LAN (SoL) access and Secure Remote Desktop access to Windows® XP/2003.

» Advanced power management features, as well as dual-socket power supplies for redundancy.

» Protect data over a public network with 256-bit encryption, SSH tunneled serial bridging, SSH tunneling for TCP/UDP, and IP packet filtering.

» Support up to 50 concurrent sessions (SDT tunnels).

» No limit on the number of clients who can access one gateway or the number of hosts accessed concurrently through one tunnel.

» On the LAN port, each gateway can port forward to an unlimited number of locally networked hosts.

» Authentication protection plus the ability to restrict access by IP address, password, or account.

» Cascadable ports. Cluster multiple units so serial ports can be accessed via one IP address.

» Equipped with 2 GB of USB flash memory.

» Store multiple local boot images locally for easy rollback. Supports offline logs for audit trails, file backup, and disaster recovery.

» Flexible system management options (including SNMP, HTTPS, HTTP, CLI in Linux Shell, Nagios® distributed monitoring, and ARP-PING).

» Embedded with open-source Linux® based OS. PC, Mac®, and UNIX® compatible.

» Embedded DHCP server for managing LAN devices.

» Rackmountable (1U) with included mounts.

» Flash upgradable.

» RoHS compliant.

Reach multiple server console ports and two LANs remotely with the Advanced Console Server
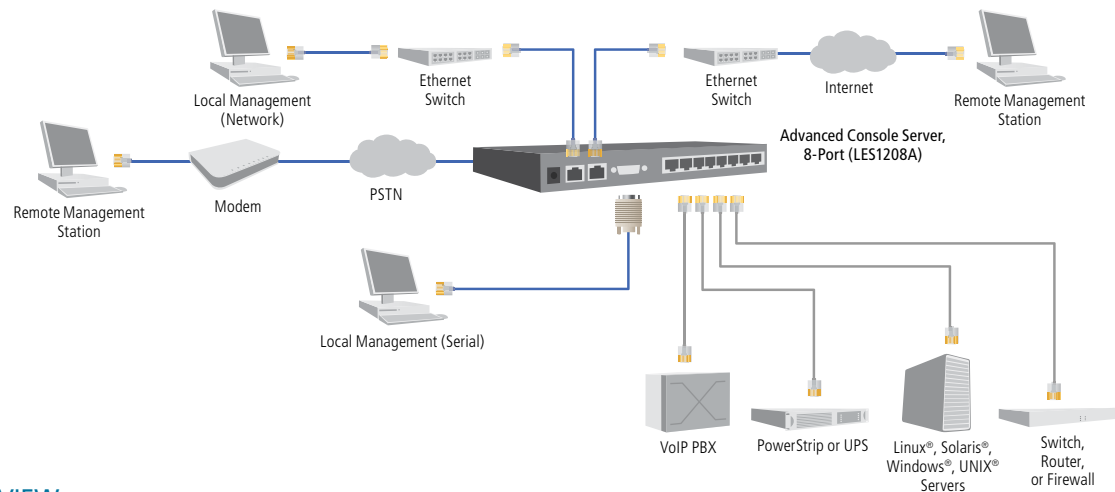
OVERVIEW

Why sacrifice performance, flexibility, and server interoperability for price when purchasing a remote console server port management solution when you can have a Black Box® Advanced Console Server instead? It gives you out-of-band serial console port access and control in a secure platform that fits the budget of small to medium-size businesses as well as educational, healthcare, and government institutions.

The Advanced Console Server provides access to data center systems for reliable 24/7 uptime. Equipped with a built-in modem as well as a local console port and dual 10/100-Mbps Ethernet ports, it gives you multiple access paths. Depending on the model you order, you can manage 8, 16, or 48 console ports remotely.

Through this gateway, you can remotely access servers and virtual servers, as well as switches, firewalls, PBX systems, and other network devices. Serial ports on the console server are even specially pinned for routers or other devices that use the Cisco® RJ-45 "rolled" port wiring scheme—simplifying setup further.

You even get easy access to service processors. Many pricier console servers don't, which can be a real shortcoming if you want to connect to today's newer servers that include service processor cards or sideband interfaces by default.

It has advanced power management features, too. Using the Advanced Console Server's user-friendly GUI, you can monitor a remote UPS and reset a PDU or an RPS power system. Plus, for power backup and maximum uptime of the console server unit itself, it's equipped with a redundant AC power supply.

It also features 2 GB of USB Flash memory for local FTP/TFTP storage, which you can use for disaster recovery and storing device configurations and logs off-line (such as for syslog and Wireshark packet analysis). Quickly store local copies of your router and switch configurations and backup configurations, and roll back to an earlier configuration if necessary.

What's more, it includes IPSec High Availability VPN gateway software, which enables you to set up console connections within a secure IPSec VPN network. If there's a network outage, the console server will automatically reconnect the VPN using a modem link or broadband failover route. IPSec VPN network compatability also makes it great for utilities who need to meet NERC CIP standards.

And because the console server uses the Linux® platform, there's no dealing with proprietary protocol issues when you want to customize it to your requirements (a developer kit is included).

Advanced Console Servers come with a GUI and embedded tools for remotely managing power devices for UPS/RPC monitoring, graphing, and alarms.

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APPLICATIONS

In the **data center**, use Advanced Console Servers to:

» Simplify the management of computer, telecommunications, and power equipment, especially in large centers (those occupying an entire floor or multiple floors in a building).

» Establish in-band and out-of-band management that meets the entire data center's local and remote management needs.

» Better control power dissipation and make better use of equipment space, especially in processing-centric centers with row after row of racked server clusters.

» Rigorously control access privileges, while monitoring and logging all access events to better enforce enterprise security policies.

In the SMB **server room**, use them to:

» Simplify the control of servers and gear racked in a single room, especially in limited-staff offices dealing with an expanding server count.

» Set up a single integrated gateway to locally and remotely manage all serial- and network-connected devices, particularly newer servers with embedded service processors and baseband management controllers (BMCs).

» Set up encrypted authenticated access for local and remote access.

» Enact better strategies for disaster avoidance.

IN DEPTH

Reach equipment out of band securely.

In addition to access through its dual 10BASE-T/100BASE-TX TCP/IP ports, the Advanced Console Server supports out-of-band access to your critical equipment and vital assets. The console server features both an internal modem and a DB9 local console port. Use the internal modem or attach an external modem via a serial cable to the DB9 port while configuring the second Ethernet port for broadband out-of-band access.

Through the modem connection, you can manage your distributed network of servers, Cisco® routers, and other devices with the latest in console access. Typically, you do this via Telnet software, using an SSH tunnel through the console server to communicate securely with serial port-connected devices over the Internet or any other public network. But you can Telnet through the console server to the serial device several other ways, too. (See "LAN Console Port Management" and "Serial Console Port Management" in the Tech Specs on **page 4**.)

The console server comes with SDT Connector, a free open-source SSH Java client. Use it to auto-load your console server's configurations and, to ensure secure connectivity with attached network and serial devices, set up SSH tunnels for port-forwarding communications through the console server. The same SDT Connector is used for setting up 10-/100-Mbps auto failover route to a remote, out-of-band gateway.

Advanced encryption keeps all connections secure. In addition, the console server gives you a choice of filtering and access logging facilities, which you can archive off-line using its USB flash. Store offline logs for serial ports, available networks, and more. And to protect against unauthorized access, the system enables you to restrict access by IP address, password, or account.

Set up to scan the serial stream and send alerts.

To help ensure maximum uptime, the Advanced Console Server proactively scans the serial stream on console ports, searching for specific errors and phrases.

The console server supports SNMP and SMTP alerts/traps for serial ports and hosts. Simply set the trigger condition for each port, and it monitors port traffic for defined character stream patterns or phrases. If they're detected, the console server sends SMS text or an e-mail to you or an SNMP server (or to a central Nagios server, if it's used). This alerts facility can be enabled on any and all serial ports or connected hosts.

In addition, the console server enables you to be informed of its operating status. An LED on the back of the unit flashes a "heartbeat" periodically, and its "heartbeat monitor" agent can trigger dial-back or a redundant path during network outages. The heartbeat monitor checks that the console server is on-line and operating as it should, that it's clear to send alerts and alarms, and is accessible by remote users. You can set it up so if the heartbeat falters, it can automatically dial up a remote site to raise an alarm, or switch to and activate a failover link.

A simple browser-based interface gives you an easy, intuitive way to consolidate the management of hundreds of ports and UPS systems over a single IP connection.

Supports GNU bash shell script.

Some console port-access products in today's market use proprietary protocols for communications. However, the Advanced Console Servers give you access to the Linux core, including bash. This makes them ideal for industrial control applications where you need to remotely manage proprietary equipment with custom protocols.

Through the Linux kernel, you can write custom scripts that can run manually or automatically. This way, you proactively create self-healing solutions for cycling power on a router or switch on PING failure.

You can write custom scripts so they run each time a particular alert triggers. For example, you can set it up to power cycle on a managed device when a specific alert event occurs or to send multiple notification e-mails when an alert triggers.

Types of users supported

Advanced Console Servers support two classes of users:

• **Administrative users**, who are authorized to configure and control the console server, and to access and control all the connected devices. An administrator can access and control the console server using the config utility, the Linux command line, or the browser-based management console. By default, the administrator has access to all services and ports to control all serial connected devices and network-connected devices (hosts).

• Members of the **users** group, who are only authorized to perform specified controls on specific connected devices. When authorized, they can access serial or network devices and control these devices using the specified services, for example, Telnet, HTTPS, RDP, IPMI, Serial over LAN (SoL), power control. An authorized user also has a limited view of the management console and can only access authorized configured devices and review port logs.

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MORE APPLICATIONS

In **branch offices**, use Advanced Console Servers to:

» Simplify the control of distributed office server rooms or wiring closets containing servers, UPSs, PDUs, and network devices like Cisco® Integrated Service Routers.

» Set up a centralized in-band and out-of-band management gateway for local and remote serial port management—especially for satellite offices with little or no IT staff on-site.

» Ensure maximum system uptime for sales offices, the customer-facing points crucial to the bottom line of many business enterprises.

» Give off-site techs 24/7 access to integrated small business server applications, those that branch offices often depend on for e-mail, printing, file storage, Web access, and more.

In smaller **service provider applications**, use them to:

» Better serve the IT needs of clients in different offices by keeping servers and equipment up and running on a continuous basis.

» Support new services while at the same time reducing the need for on-site service calls and increasing profitability.

» Avoid the need for numerous high-priced management devices (dedicated power switch controllers, service processor management units, KVMoIP switches, etc.) at the client site.

» Proactively diagnose client-side equipment problems, setting up notification alarms and alerts to notify you of pending IT disasters.

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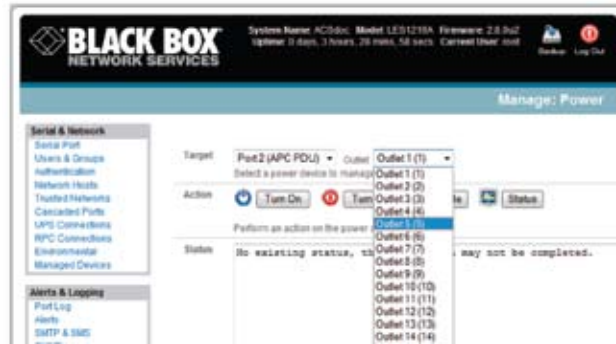
Both administrators and users can access and control serial- and network-attached PDU power strips. By outlet, you can initiate the action you want to take, whether it's turning it on or off, cycling, or checking its status.

TECH SPECS

Compliance — FCC Part 15 A, UL® 1950, TUV, C-Tick, NERC CIP Cyber Security Compliant, RoHS

CPU Processor — 166 MHz ARM (Micrel KS8695P)

LAN Console Port Management — Secure SSH tunneling (TCP/UDP); Secure Remote Desktop access to Windows XP/2003; Secure VNC access to Sun, Windows, Linux computers; secure HTTP(S) access to browser-controlled appliances; Native IPMI 1.5/2.0 (RMCP/RMCP+) support for BMC and service processor access and control; Secure SOL to BIOS, EMS, ACS data; service processor access (IPMI, ILO, LOM); access to KVM built into service processors (DRAC, RSA); secure Telnet access; limit user access by LAN device and SDT service for device; embedded DHCP server

Memory — 64 MB SDRAM, 16 MB embedded Flash; external 2 GB USB Flash storage drive (included)

Network Protocols — NTP, TCP/IP, UDP/IP; Ethernet, Fast Ethernet, PPP, RS-232

Operating System — Linux with source code access (custom development kit included); PC, Mac, and UNIX compatible

Security and Authentication — Secure Shell (SSH-2, SSH-3); TACACS+, RADIUS, LDAP, PAP/CHAP (dial-up); dial-back support; local authentication; system event syslog; SSH port and IP forwarding support; IP packet filtering

Serial Console Port Management — SSH tunneled serial bridging; Windows 2003 Server ACS and EMS support; Sun/Solaris® ready (no inadvertent breaks); Break over SSH support; port triggers with SMNP and e-mail alerts; off-line data logging (Syslog, NFS, CIFS); on-line data buffering and logging; access by TCP port; Telnet/unauthenticated Telnet SSH/Raw TCP connect; RFC 2217 port redirection; Windows Remote Desktop or VNC over serial support; per serial port user access lists

CE Approval — Yes

Connectors — Serial: (8), (16), or (48) RJ-45 (RS-232); Local console/external modem serial port: (1) DB9 F (RS-232); Built-in modem port: (1) RJ-11; Network/broadband out-of-band access: (2) RJ-45 (10BASE-T/100BASE-TX); USB: (1) USB 2.0

Operating Environment — Temperature: 41 to 122° F (5 to 50° C); Humidity: 5 to 90%, noncondensing

Power — Dual-socket power supplies: Input: 100–240 VAC, 50–60 Hz; Consumption: Less than 30 W

Size — 1.75"H (1U) x 17"W x 12"D (4.4 x 43.1 x 30.4 cm)

Weight — 11.8 lb. (5.4 kg)
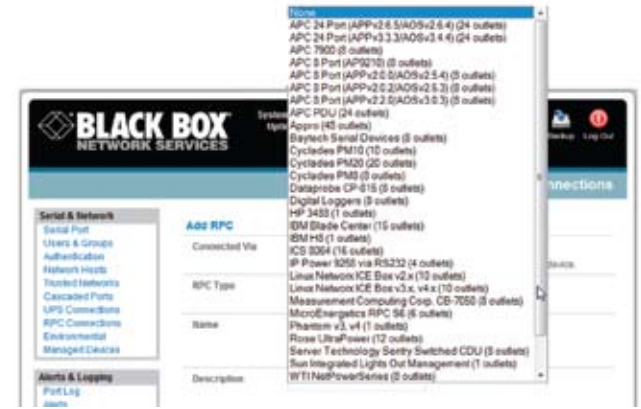
Through a serial connection, you can access a menu to select your type of RPC device. The console servers support most popular network and serial PDUs. If your PDU isn't on the list, then you can add support directly.

Advanced power and hotkey PDU or RPS control.

Because an Advanced Console Server can be used to manage ports on PDUs, UPSs, and environmental monitoring devices—and, in the process, cut power consumption and lessen environmental impact—it's a great addition to any IT department or company wanting to initiate "clean tech" energy conservation. It's also a great way to unify power and IT resources while controlling data centers anywhere in the world.

The console server comes with UPS monitoring tools and supports complex power architectures in modern data centers and NOCs where there's a mix of UPSs from various manufacturers. You can not only more easily manage UPS hardware connected to your expensive devices, you can ensure a safe shutdown of systems, too. It can also be used for out-of-band access to a "dead" communications device—one that's entirely locked up in a frozen condition.

Using a hotkey from the command line interface via SSH or Telnet, you simply launch the console server's remote power control (RPC) menu to turn power on (or off), power cycle, or just check the power status of a particular device. Or you activate power status control and monitoring through SNMP. The Advanced Console Servers support thousands of PDU or RPS units, for both serial- and SNMP-connected control.

Item	Code
Advanced Console Servers	
8-Port	**LES1208A**
16-Port	**LES1216A**
48-Port	**LES1248A**

✦ All models include (2) CAT5 cables, (1) DB9 F–RJ-45S straight connector, (1) DB9 F–RJ-45S crossover connector, (2) IEC AC power cords, a rackmount kit, and a Quick Start Guide and user manual on CD-ROM.

Also see our **Value Line Console Servers** (LES1108A/1116A/1148A), with a single 10/100 interface, a single power supply, 8 or 16 MB of embedded flash memory, no built-in modem, and "classic" RJ-45 serial ports.